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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,883	08/21/2003	Dae-Sik Kim	1293.1957	6836
21171	7590	06/22/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			SEVER, ANDREW T	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/644,883	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> Andrew T Sever	<b>Art Unit</b> 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☒ Claim(s) 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/15/2003</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 107, 131, 137, 145, 117, 140, and 120. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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It appears applicant has failed to describe any of the lens in figure 1, however applicant has possibly missed other components and should review both the drawings and specification to insure a one to one correspondence between the drawings and the specification.

*Specification*

3. The disclosure is objected to because of the following informalities: fan is misspelled on page 3 as "pan".

Appropriate correction is required.

*Claim Objections*

4. Claim 33 recites the limitation "second cylinder lens" in claim 31. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required

There is no first cylinder lens in claim 31, in order for there to be a second it is generally accepted there must be a first.

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 31, 34, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. (US 5,969,832), and further in view of Yokoyama (US 6,547,400.)

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Nakanishi teaches in figure 1 a projection system comprising a light emitter (1), which emits light of a plurality of different colors;

A light valve (7) which forms a color image by turning pixels one of on and off according to an input image signal, the light valve disposed at an image forming end of the light path;

A collimator lens (3) disposed in the light path between the plurality of light emitters and the light valve, the collimator transmitting incident light beams at least nearly parallel;

A scrolling unit (4 or 5) rotatably disposed on the light path between the collimator lens and the light valve, the scrolling unit receiving incident light beams, separating the incident light beams into color beams, and scrolling the color beams so that they are received by the light valve at different portions thereof; and

A pair of fly-eye lenses (6, a lenticular array is made of a plurality of fly-eye lenses) disposed on the light path between the scrolling unit and the light valve which receive the scrolling color beams and focus the color beams onto relay lens disposed on the light path between the pair of fly-eye lenses and the light valve and transmits to the light valve received color beams from the pair of fly-eye lenses.

Nakanishi however teaches single light emitter which emits white light instead of a plurality of light emitters. Yokoyama teaches such a plurality in figure 1 with LED's (21). Yokoyama teaches in column 2 lines 1-15 that the use of LED or other point light sources over Arc lamps like that taught by Nakanishi has the advantage of allowing for a smaller compact

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projection system with a uniform light intensity. Given that making the projection system smaller is a goal of those of ordinary skill in the art, it would have been obvious to those same ones of ordinary skill in the art at the time the invention was made to use LED's or other point light sources as taught by Yokoyama in the projection system of Nakanishi.

*With regards to applicant's claim 34 see above.*

*With regards to applicant's claims 22 and 23:*

The method of using the projection system taught by Nakanishi in view of Yokoyama above is obvious.

*With regards to applicant's claims 24 and 25:*

The collimating lens (3) adjusts the width of the light beams before separating while the lenticular lens array (6) inherently adjusts the width of the light beams after separation.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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8. Claims 1-4, 6, 9-29, 31, and 34 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 25-27, 42 of copending Application No. 10/620,810 in view of Yokoyama (US 6,547,400).

The '810 claim 25 teaches everything except it claims a light source radiating a single white light, this differs from the independent claims of the present invention in that they claim light emitting units emitting light beams of different wavelengths. The '810 claim implies a single light source as opposed to a plurality as claimed by the independent claims of the present application. (White light is made of light beams of different wavelengths.)

As described above Yokoyama teaches substituting a plurality of light emitting units (LED's as claimed in applicant's claims 4, 9, which emit red, green, and blue light as claimed in applicant's claim 20) for a single light source as claimed by the '810 claim. Yokoyama teaches that it allows for a smaller more compact projection system. Accordingly it would be obvious to one of ordinary skill in the art at the time the invention was made to combine the '810 claim's teachings with the plurality of emitters as taught by Yokoyama.

This is a provisional obviousness-type double patenting rejection.

9. Claim 7 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 25-27, 42 of copending Application No. 10/620,810 in view of Yokoyama (US 6,547,400) as described above and further in view of Flasck (US 5,022,750.)

The '810 application in view of Yokoyama does not teach the use of optical fibers disposed between the light emitting units and the collimating lens, however the use of optical

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fibers between the light emitting units and other optical means is well known, for example see figure 6c of Flasck. Given that the use of optical fibers allows for spacing the light source away from the rest of the optical components allowing for improved cooling, as well as allowing for a smaller projector (As taught by Flasck in column 6 lines 3-16), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use optical fibers in the projection system taught by the '810 application in view of Yokoyama.

This is a provisional obviousness-type double patenting rejection.

10. Claims 1-6, 8-34 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 10/644,933 in view of Yokoyama (US 6,547,400).

The '933 claim 1 teaches everything except it claims a light source radiating a single white light, this differs from the independent claims of the present invention in that they claim light emitting units emitting light beams of different wavelengths. The '933 claim claims a single light source as opposed to a plurality as claimed by the independent claims of the present application. (White light is made of light beams of different wavelengths.)

As described above Yokoyama teaches substituting a plurality of light emitting units (LED's as claimed in applicant's claims 4, 9, which emit red, green, and blue light as claimed in applicant's claim 20) for a single light source as claimed by the '933 claim. Yokoyama teaches that it allows for a smaller more compact projection system. Accordingly it would be obvious to



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one of ordinary skill in the art at the time the invention was made to combine the '933 claim's teachings with the plurality of emitters as taught by Yokoyama.

This is a provisional obviousness-type double patenting rejection.

11. Claim 7 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 25-27, 42 of copending Application No. 10/644,933 in view of Yokoyama (US 6,547,400) as described above and further in view of Flasck (US 5,022,750.)

The '933 application in view of Yokoyama does not teach the use of optical fibers disposed between the light emitting units and the collimating lens, however the use of optical fibers between the light emitting units and other optical means is well known, for example see figure 6c of Flasck. Given that the use of optical fibers allows for spacing the light source away from the rest of the optical components allowing for improved cooling, as well as allowing for a smaller projector (As taught by Flasck in column 6 lines 3-16), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use optical fibers in the projection system taught by the '933 application in view of Yokoyama.

This is a provisional obviousness-type double patenting rejection.

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*Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2003/0007134 to Maximus teaches in figure 6 a rotating polarization wheel

US 6,619,802 to Janssen et al. teaches in figure 1 a rotating drum with diffractive holographic patterns on it.

US 6,219,110 to Ishikawa et al. teaches in figure 1, 7, and 8 different moving optical units.

US 6,547,398 to Cho et al. teaches in figure 16 a scrolling lenticular array.

US 2004/0105077 to Kim et al.

US 6,511,184 to Yamagishi et al. teaches in figure 1 a plurality of light emitters (210R-B) which emit light onto a rotating drum which scrolls the light beams across a single light valve.

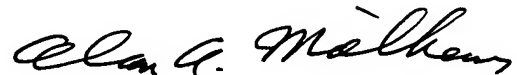
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 271-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS



**Alan A. Mathews**  
Primary Examiner